Factor it in

Expectations, weather and turf health determine the amount of chemical inputs

Golfer expectations and the weather. Arguably more than anything else, these two factors determine how superintendents prepare and maintain golf courses. And, depending on where you live, this has a great affect on the amount of chemicals used – fungicides, plant growth regulators and fertilizer, to name a few.

Regardless if the course is in the Pacific Northwest or along the Eastern Seaboard, superintendents agree the key to achieving the best possible conditions is establishing and maintaining healthy turf. Their methods might differ, but the goal is the same.

The use of chemicals such as fungicides is entirely based on the weather, says Darin Bevard, a U.S. Golf Association senior agronomist for the Mid-Atlantic region.

“In 2005, our region experienced a hot, wet summer,” Bevard says. “Most superinten-
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TURFGRASS MANAGEMENT

dents exceeded their chemical budgets. Last year was better, but costs increased because of price increases for these products. However, cost aside, superintendents generally will use as much fungicide as it takes to meet golfer expectations for course conditions.”

**INCREASED FERTILIZATION**

Kris Givens remembers when the approach to fertility programs for greens was “lean and mean” several years ago. Not so anymore for the superintendent of Whitford Country Club in Exton, Pa.

“Anthracnose is a bad disease in our area, and we have to control it,” Givens says. “So part of our program is fertilizing at a higher rate than we used in 2000 and 2001.”

The 18-hole private course has bentgrass/Poa annua greens and tees and bentgrass fairways. Givens uses EarthWorks 5-4-5 natural organic fertilizer. In the spring, early summer and fall, he applies one-half to one pound per 1,000 square feet and spoon-feeds at a rate of one-tenth of a pound weekly in the summer to maintain color and avoid flushes of growth.

To maintain healthy turf, Givens’ fungicide program includes monthly applications of a Signature/Daconil mix or a Signature/26GT mix from March through November. In the summer, it can get hot and humid, so Givens usually sprays something every two weeks to help him manage disease. Golfers don’t even notice, he says.

“We rotate Banner Maxx and Rubigan among other SI fungicides and apply Primo plant growth regulator every two weeks to maintain green speed,” he says. “We have a good fertilizer program with a strong rotation, and we’re hitting everything from dollar spot to summer patch to pythium. We really haven’t had any issues. In the summer, we have to pay attention and be smart. If the weather changes, we might have to raise the height of cut on the greens and back off on double-cutting.”

**CHANGE IN SCENERY**

When Chris Kirchner left Highlands Falls (N.C.) Country Club to become superintendent of Heritage Hill Golf Club in Sheperdsville, Ky., he experienced more than a geographical change. Nestled in the Great Smoky Mountains, the Highlands Falls course is at an elevation of more than

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At Heritage Hill Golf Club, Chris Kirchner rotates 10 to 15 different fungicides on greens to prevent tolerance build-up. Photo: David Wolff
At Glendale Country Club, Steve Kealy, CGCS, has increased the amount of nitrogen applied to the course to keep turf healthy. Photo: David Wolff

4,000 feet. In the summer, daytime highs are in the low 80s with little humidity. In Shepherdsville, summers are hot and humid.

“T’m using more fungicides because disease pressure seems to be higher in my new area,” Kirchner says.

Heritage Hill, which opened in August 2007, features A-4 bentgrass greens and collars. Tees and fairways are zoysiagrass, the irrigated rough is bluegrass, and the remainder is fescue. Fungicides are applied on greens and fairways regularly and on tees when there’s an outbreak of zoysia patch.

“I’ll spot spray when necessary,” Kirchner says. “Most of my spraying during the grow-in was with herbicides. I rotate fungicides quite a bit, using 10 to 15 different products on greens so we don’t build up a tolerance. The new products seem to last longer, even though they have less active ingredient. That’s a good thing for the environment, but bad for budget purposes. It seems like I have to buy more, and fungicides are very expensive products.”

REVERSE TRENDS
Larry Gilhuly, director for the Northwest region of the USGA Green Section, has seen expectations for course conditions climb off the chart since he joined the Green Section in 1984.

“It’s night and day, but the good news is superintendents are growing healthier grass today,” Gilhuly says. “The Stimpeter led to a trend of lowering heights of cut on greens and applying less fertilizer. This caused problems with anthracnose and moss. Now we’ve got fertilizer levels back up and are using other tools, such as greens rollers.”

In the Pacific Northwest, low humidity generally reduces disease pressure. The biggest issues are pink snow mold and anthracnose, but that doesn’t mean superintendents don’t use fungicides.

“The use of fungicides in our region hasn’t necessarily increased,” Gilhuly says. “Rates are less because products are more effective.”

Gilhuly advocates target rolling for smooth greens with a desirable speed and healthy turf. (See sidebar on page 84.)

“One answer to the green speed issue consists of more rolling and rais-
ing the height of cut," he says. "However, rolling more than three times a week causes problems with turf wear."

The concept of target rolling comes into play to provide a common sense approach to this issue, Gilhuly says. Golfers, generally, are poor judges of green speed, yet they desire smooth greens and judge green speed around the hole, so why not simply roll 20 to 30 feet around the hole, rather than the entire green? For example, if holes are changed six times weekly, and the greens are of adequate size, green rolling in a target manner could be completed six times weekly, which would be equivalent to rolling two or three times because the entire green isn’t being rolled every time, Gilhuly says.

"Also, putting green rollers generally increase speed from six to 10 inches, depending on the type of roller used," he says. "Because players have a difficult time determining this magnitude of difference, and rollers make greens smoother, the golfers benefit without placing the turf under more stress."

BALANCED FERTILITY PROGRAM

Growing healthy turf requires a balanced fertility program, says Steve Kealy, CGCS, of Glendale Country Club in Bellevue, Wash.

"We’ve got fertilization back up to a comfortable level," Kealy says. "Seven to eight years ago we were starving the greens, applying only 2.5 pounds of nitrogen because that was the trend. Sure, the greens were fast, but we were getting every kind of weird, funky disease. The turf was stressed and half-sick. Now we’ve got nitrogen levels back up to keep the turf healthy. We apply five to 5.5 pounds, and combined with other products and practices. We’re far

Try sectional rolling for consistent green speed

Mark Cupit, CGCS, of Ironwood Country Club in Palm Desert, Calif., and Larry Gilhuly, director for the Northwest region of the USGA Green Section, have consulted about the process of sectional, or target, rolling throughout the years. Cupit explains why he uses this method and how it’s put into practice:

"Back in the good old days, I remember the first time I dropped my green heights down to three-sixteenths of an inch," he says. "It was pretty scary. Some of you are old enough to remember the speed revolution. We used to scalp them down, withhold fertilizer and water and bring the greens right to the brink of death. Now, with the help of new equipment technology, superintendents have the ability to maintain what every golfer and turf manager wants: smooth, fast putting surfaces without starving the turf and without the damage caused from heavy rollers and ultralow mow heights."

Cupit overseeds the club’s Tifdwarf greens each fall with Poa trivialis. After the initial grow-in phase, he uses sectional rolling to achieve the best possible putting surface for club members.

"Using one of my lightweight rollers, I start rolling my greens every day, but not the entire green, only the third of the green where the pin will be," he says. "Our course sets pin locations seven times a week using six front, six middle and six back cup set placements."

When initiating this program, it takes about two weeks to normalize speed across the entire putting surface, Cupit says. The third of the green that was rolled Monday will only lose a couple inches of speed before it gets rolled again. Even the best players at the club can’t recognize the difference in speed.

"The benefits could be seen as enabling the turf manager to have faster putting surfaces without the ultralow mow heights," he says. "I like to get our greens around 11 feet for the snowbird season. My greens are mown at a bench setting of 0.115 inch with a John Deere 180 walk mower, rolled daily and spiked with a PlanetAir every three weeks. Along with a good fertility and Primo program, I’ll continue this for the entire season. For special events when speeds need to be really fast I’ll add double cutting for several days before the event and maybe some sand topdressing."
less concerned with green speed and excessive growth. We use Primo plant growth regulator for consistent green speed, lightly topdress for a smooth surface and verticut weekly. We’ve got healthy grass with no growth spurts. We’re actually using less fungicide.

**STICK TO THE BASICS**
The most important thing superintendents can do to achieve healthy turf is to be flexible and adapt their fertility programs when necessary, says Cutler Robinson, CGCS, of Bayville Golf Club in Virginia Beach, Va.

"Superintendents must be disciplined in following through with their programs," Robinson says. "They can’t let every isolated comment or complaint dictate what they do. We have a good base model for what works in an average year on our course. We analyze soil samples two or three times a year and monitor the soil regularly. We also test the pH of our water. We’ll change nutrition rates if the situation demands it. For example, if we get a leaching rain, we’ll come back sooner with a foliar fertilizer application."

Ultimately, the goal is to marry turf health and playability, Robinson says.

"If greens are overfertilized, they won’t putt well, and thatch will start to build up," he says. "Low heights of cut reduce the root system, and the turf can’t store carbohydrates as efficiently. In this situation, we use frequent, light foliar applications of a balanced fertilizer to maximize root growth and carbohydrate reserves. That’s why superintendents must be disciplined, not reactionary, because we can’t create carbohydrate reserves in summer. We’re a high-end club, and our fertility program is all about sticking to the basics."

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**Cupit strongly recommend reading “The Superintendent’s Guide to Controlling Putting Green Speed” by Thomas A. Nikolai, Ph.D.**

"I’ve been doing this routine for several years now and have found not only very smooth putting surfaces, but very consistent day-in-and-day-out green speeds," he says. "This is what every golfer wants. The best thing for me is having the speed without sacrificing the health of the turf."

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Sectional, or target, rolling is implemented at Ironwood Country Club to achieve smooth, fast greens without starving the turf. Photo: David Wolff